AMENDMENTS TO THE CLAIMS

A detailed listing of all claims that are, or were, in the application is presented below. Changes in the currently amended claims are shown by double brackets for deleted matter and underlining for added matter.

1. (Previously presented) A method of forming a junction or switch between at least two conductors incorporated into a fabric, comprising the steps of:

providing a fabric with at least two overlapping conductors or sections of a conductor incorporated therein wherein the conductors or sections are individually insulated conductive fibers;

removing insulation at the junction point from the conductors or sections to expose conductive fiber, wherein the step of removing the insulation includes

placing the fabric incorporating the conductors or sections between a surface and a masking device, and

removing insulation at the point of overlap of the conductors or sections identified through the masking device;

bringing the conductors into contact with each other at a junction point; and

forming a bond between the conductors at the junction point.

2. (Previously presented) The method of claim 1, wherein the step of removing the insulation includes dispensing a solvent through the masking device.

3. (Canceled)

4. (Original) The method of claim 1, wherein the conductors include a conductive fiber and a connector.

5. (Previously presented) The method of claim 1, wherein the masking device is patterned with a via at the intersection of the two conductors.

6. (Original) The method of claim 1, wherein the fabric comprises a computer-generated pattern of intersecting conductive fibers and the masking device comprises a computer-generated pattern with multiple vias that correspond to the pattern of intersecting conductive fibers in the fabric.

7. (Original) The method of claim 1, wherein the masking device comprises a material chosen from screen-printing material, plastic, and metal.

8. (Original) The method of claim 1, wherein the step of bringing the conductors into contact with each other at a junction point comprises at least one of chemical bonding, laser light application, ultrasonic welding, and combinations thereof.

9. (Original) The method of claim 1, wherein the step of bringing the conductors into contact with each other at a junction point comprises:

placing fabric incorporating the conductors between an anvil and a sonotrode;

aligning a desired junction point of the conductors at the contact point of the anvil and sonotrode; and

subjecting the conductors to ultrasonic vibrations while pressing the sonotrode and anvil into contact at the junction point.

10. (Original) The method of claim 1, further comprising identifying pre-selected points of junction between the two conductors.

11. (Original) The method of claim 1, wherein the fabric is already woven or knitted.

12. (Original) The method of claim 1, wherein the method is carried out during formation of the fabric.

13. (Original) The method of claim 1, wherein forming a bond between the conductors at the junction point comprises:

creating intense friction between the conductors, thereby exciting the conductors;

breaking atomic bonds within each individual conductor; and

triggering atomic binding forces between the two conductors.

14. (Original) The method of claim 1, further comprising the step of depositing a conductive paste at the junction point of the two conductors.

15. (Previously presented) A method of forming a junction or switch between at least two

conductors or sections of a conductor, incorporated into a fabric, comprising the steps of:

providing a fabric with at least two overlapping conductors or sections of a conductor incorporated therein;

bringing the conductors or sections into contact with each other at a junction point; and

forming a bond between the conductors or sections at the junction point, further comprising the step of depositing a conductive paste at the junction point of the two conductors,

wherein the step of depositing a conductive paste at the junction point comprises:

placing the fabric incorporating the conductors or sections between a surface and a masking device; and

dispensing a conductive paste through the masking device.

16. (Original) The method of claim 1, wherein the method is performed off-line after fabrication of the fabric.

17. (Currently amended) A system that forms a junction between individually conductive fibers or sections of an individually conductive fiber incorporated into a fabric web, comprising:

an apparatus that brings at least two of the individually conductive fibers or at least two sections of an individually conductive fiber in the fabric web into contact with each other at a junction point and forms a bond between the conductive fibers or sections at the junction point,

wherein the apparatus has components disposed on opposite sides of the fabric web for bringing the conductive fibers or sections into contact with each other and forming the bond at the junction point, at least one of said components being designed for movement across the fabric web to the junction point and for forming the bond at the junction point and being capable of movement in at least two of the X, Y and Z directions along the fabric web and towards and away from the fabric web.

18. (Currently amended) The system of claim 17, wherein the individually conductive fibers or sections of an individually conductive fiber are insulated, the system further comprising a second apparatus that removes insulation from two intersecting individually insulated conductive fibers or sections to expose the individually conductive fibers or sections.

19. (Currently amended) The system of claim 17, wherein the apparatus is chosen from a single textillography device and an array of textillography devices, wherein a textillography device is a device that enables the [[rapid]] realization of information routing architectures in

textile structures.

20. (Canceled)

21. (Currently amended) A system that forms a junction between individually conductive fibers or sections of an individually conductive fiber incorporated into a fabric web, comprising:

an apparatus that brings at least two of the individually conductive fibers or at least two sections of an individually conductive fiber in the fabric web into contact with each other at a junction point and forms a bond between the conductive fibers or sections at the junction point,

wherein the system is situated in a fabric manufacturing assembly line, and wherein the system further comprises at least one of:

a rail upon which the apparatus is situated, the apparatus being capable of movement in at least two of the X,Y, and Z directions along the fabric web and towards and away from the fabric web, the rail being disposed to one side of the fabric web, or a turntable to which the first apparatus is connected.

22. (Original) The system of claim 17, wherein the apparatus is chosen from a chemical deposition device, a laser, an ultrasonic welder, and combinations thereof.

23.-24. (Canceled)

25. (Previously presented) The method of claim 17, wherein the conductors include a conductive fiber and a connector.

26. (Currently amended) The system of claim 17, wherein the individually conductive fibers or sections of an individually conductive fiber are insulated, the system further comprising at least one of:

means for removing insulation from the fibers or sections to expose the individual conductors; and

means for depositing a conductive paste at the junction point.

27. (Original) The system of claim 26, wherein the conductive paste comprises a material that ensures that bonding occurs between the conductors at the junction point and increases conductivity of the fibers at the junction point.

28. (Currently amended) The system of claim 26, wherein the means for removing the insulation comprises at least one of a chemical etching apparatus, a device for mechanical removal of the insulation, an[[d]] ultrasonic welder, a laser, a heating apparatus, and combinations thereof.

29. (Previously presented) The system of claim 17, wherein the means for bringing the fibers or sections into contact with each other at the junction point comprises at least one of a chemical, a laser, an ultrasonic welder, and combinations thereof.

30. (Previously presented) The system of claim 17, wherein the means for forming a bond between the conductors at the junction point comprises:

means for exciting the conductors;

means for breaking atomic bonds within each individual conductor; and

means for triggering atomic binding forces between the two conductors.

31. (Currently amended) A method for forming a junction or switch between at least two intersecting conductors or sections of a conductor in a fabric web, comprising the steps of:

providing an apparatus for forming an electrically conductive bond between the conductors or sections, the apparatus being capable of movement across the fabric web in at least two of the X, Y and Z directions in relation to the fabric web;

providing the apparatus with means to identify the desired location for the electrically conductive bond in the fabric web;

moving the apparatus along the surface of the fabric web to [[the]] a desired identified location for the bond;

bringing the apparatus into contact with the conductors and bringing the conductors into contact with each other at the desired location; and

forming an electrically conductive bond between the conductors at the desired location to thereby form said junction or switch.

32. (Previously presented) The method of Claim 31, wherein the conductors or sections are insulated and including the step of removing the insulation of the conductors or sections at their intersection to form the bond.

33. (Previously presented) The method of Claim 31, further including the step of applying a conductive paste to the junction or switch after forming the bond.

34. (Previously presented) The system of claim 17, wherein identifying the junction point and directing movement of the component to the junction point is automated.

35. (Previously presented) The system of claim 17, further comprising means to identify the desired location for the junction point.